21st August 2023

MANRS @ AFPIF 2023

MANRS Community Meeting #12

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Agenda

1) The MANRS Community

2) MANRS Activities in 2023

3) Future of MANRS

4) How you can help MANRS

5) Feedback and Q/A Session

The MANRS Community

What is the MANRS Community?

MANRS is a collaborative initiative of Internet operators

The MANRS Participants are the Internet operators that meet the requirements of the (currently) 4 MANRS programmes:

Network Operators – 838 participants (1,038 ASNs)

IXPs – 117 participants (latest additions INX-ZA and BF-IX)

CDN/Cloud Providers – 30 participants

Vendors – 6 participants

MANRS Partners are 20 organisations recognised by the MANRS Community as supporting MANRS through promotion, training, resourcing and/or in other ways

MANRS Steering Committee

The Internet Society has developed and supported the MANRS initiative, which has grown quickly and also gained credibility outside of the operator community

MANRS has become bigger than what ISOC staff can support alone

Increasing number of decisions also need to be made :

- Auditing questions as they arise
- How to strengthen the existing MANRS Actions
- Development of ongoing MANRS conformance criteria
- How to handle participants failing to meet the necessary criteria for MANRS conformance
- Development of new programmes
- Revenue

Aim is a self-regulating community – see https://www.manrs.org/about/governance/community-charter/

MANRS Steering Committee Membership

Warrick Mitchell (AARNet) – Chair, until 31 Oct 2024
Andrew Gallo (GWU) – Deputy-Chair, until 31 Oct 2024
Melchior Aelmans (Juniper) - until 31 Oct 2025
Musa Steven Honlue (APNIC) – until 31 Oct 2025
Tony Tauber (Comcast) – until 31 Oct 2025
Flavio Luciani (NAMEX) – until 31 Oct 2024
Nick Hilliard (INEX) – until 31 Oct 2023
Arnold Nipper (DE-CIX) – until 31 Oct 2023
Arturo Sevrin (Google) – until 31 Oct 2023

Joe Hall (ISOC) – ex-officio

Next election will be November 2023 – at least 3 positions

MANRS Auditing Officers
Mat Ford (ISOC)
Kevin Meynell (ISOC)
Andrei Robachevsky (ISOC)
Aftab Siddiqui (ISOC)
Ashlyn Witter (ISOC)

MANRS Activities in 2023

Summary of 2023 activities so far

- Improving the MANRS Observatory
- Mentors and Ambassador Programme
  - 12 individuals taking part currently
- Training and implementation guides updated
- Engaging new communities - CSIRTS
- Routing Security Summit - July 2023
  - Routing Security Summit was a week of activities around on routing security

Policymaker engagement

The United States Federal Communications Commission held BGP Security Workshop that highlighted the importance of addressing BGP vulnerabilities.

We were pleased to hear so many of the speakers mention MANRS and how this community is setting a new norm for routing security.

https://www.manrs.org/2023/08/us-fcc-workshop-highlights-routing-security/

MANRS

MANRS Observatory Developments

A lot of work to improve the MANRS Observatory:

- MANRS Observatory collates data from third-party data sources BGPStream, GRIP, CIDR Report, RIR databases, PeeringDB, and CAIDA Spoofer
- BGPStream is no longer actively maintained
- Started to use GRIP (Global Routing Intelligence Platform) but this tends to generate false positives so needs improvements to tune and improve accuracy
- Administrative bogons are a significant issue that are being addressed
- More automated processing of MANRS applications to improve response times
- Self-management of MANRS Observatory accounts

Monthly Reports

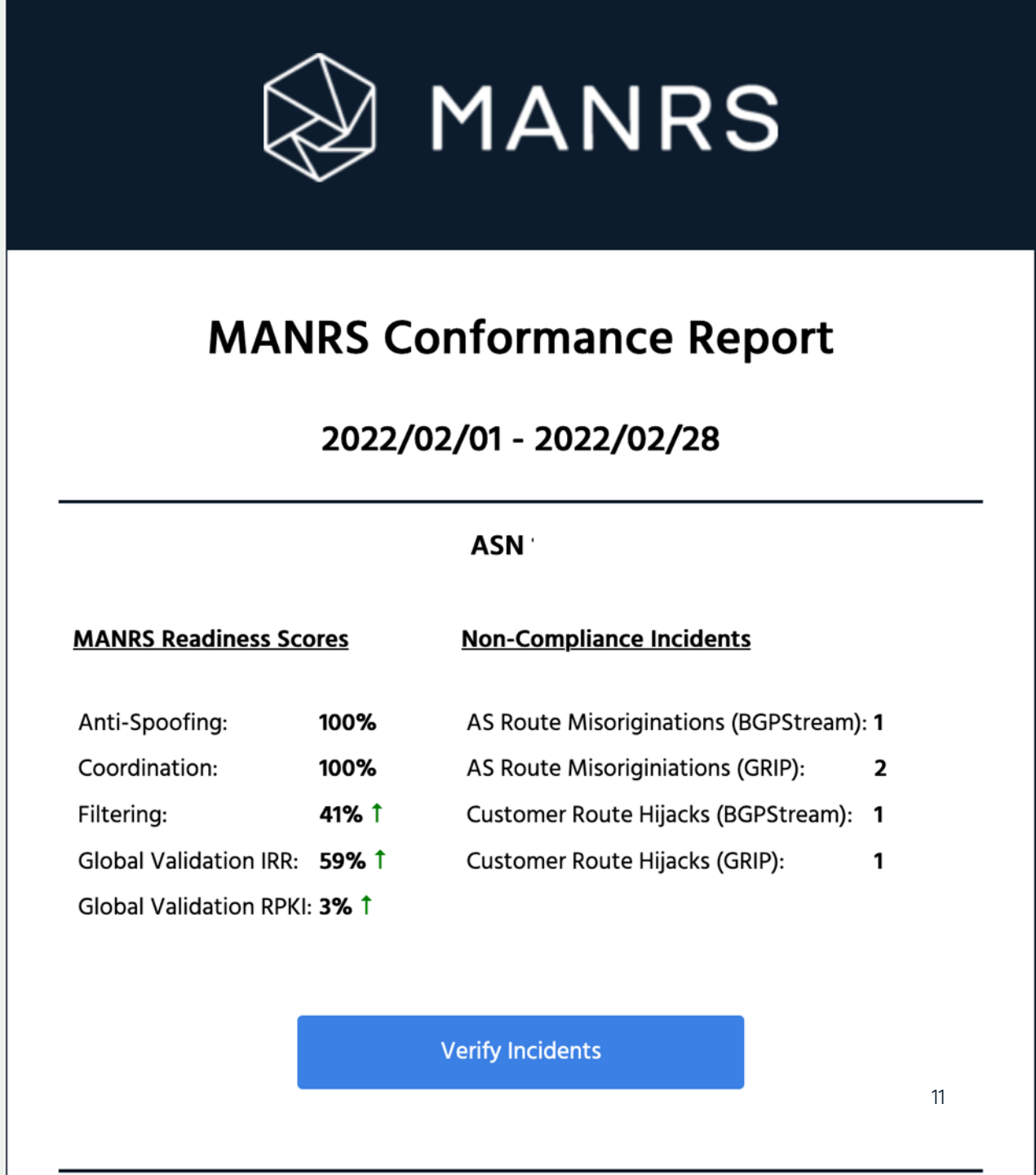
Sent to all MANRS Network Operators

Validate incident data -> tune down false positives

Raise awareness of network conformance status

Use as a regular communication channel (e.g. verify Action 3 contacts)

Can be sent to primary + any secondary contacts



MANRS

MANRS Conformance Report

2022/02/01 - 2022/02/28

ASN

MANRS Readiness Scores		**Non-Compliance Incidents**	
Anti-Spoofing:	**100%**	AS Route Misoriginations (BGPStream):	**1**
Coordination:	**100%**	AS Route Misoriginiations (GRIP):	**2**
Filtering:	**41%** ↑	Customer Route Hijacks (BGPStream):	**1**
Global Validation IRR:	**59%** ↑	Customer Route Hijacks (GRIP):	**1**
Global Validation RPKI:	**3%** ↑		

Verify Incidents

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MANRS Observatory API

MANRS Observatory data now available via REST-based API

Requires Observatory account:

- **MANRS Participants** get access to all MANRS scores + detailed info on own ASN(s)
- **MANRS Partners** get access to selected ASN(s)
- **API-only users** get access to all public data

How to access API:

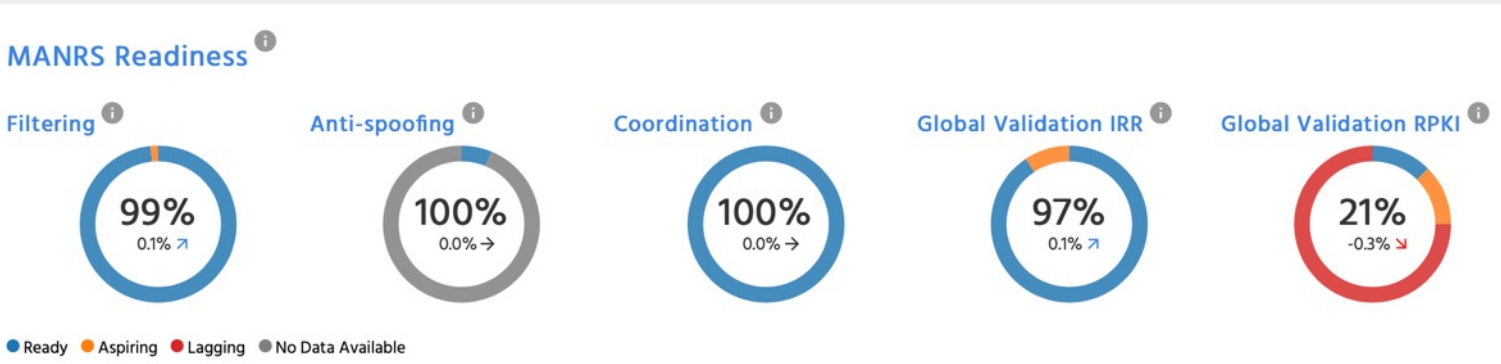
- Go to your Observatory profile (top-right icon)
- Click button to generate API key
- API documentation

Publishing MANRS Readiness Scores

Network operators across the globe have already committed to the MANRS initiative and implemented the Actions defined in the MANRS document.

Search Participants: Internet2 | Show 10 entries | Download CSV

Organization Name	Areas Served	ASNs	Action 1 Filtering	Action 2 Anti-Spoofing	Action 3 Coordination	Action 4 Global Validation
Internet2	US	11164, 11537, 13436, 55038, 396450, 396955, 396961	✓	✓	✓	✓
Organization Name	Areas Served	ASNs	Action 1 Filtering	Action 2 Anti-Spoofing	Action 3 Coordination	Action 4 Global Validation



MANRS

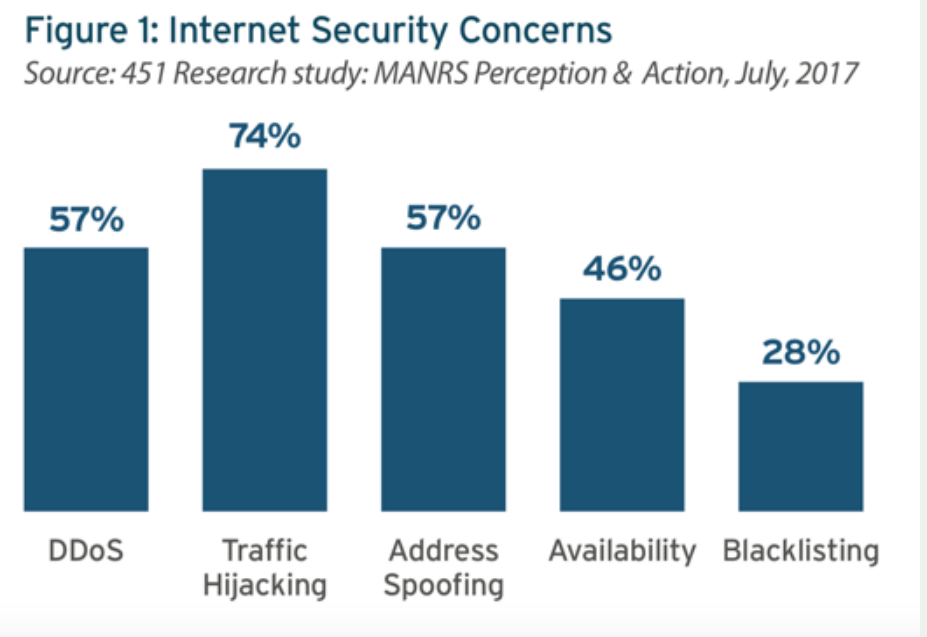
The Future of MANRS

Focus on enterprises/customers

Organization's connectivity provider is the first line of defense. It is part of organization's supply chain security.

In the context of Internet routing a single organization can mitigate some of the risks by a strong security posture (e.g. by implementing the MANRS baseline). A strong and reliable tie with its connectivity provider(s) can achieve much more.

What are the requirements for the connectivity provider?



Elevated tier of MANRS

A second, elevated tier of MANRS participation for network operators that comply with more stringent requirements and auditing.

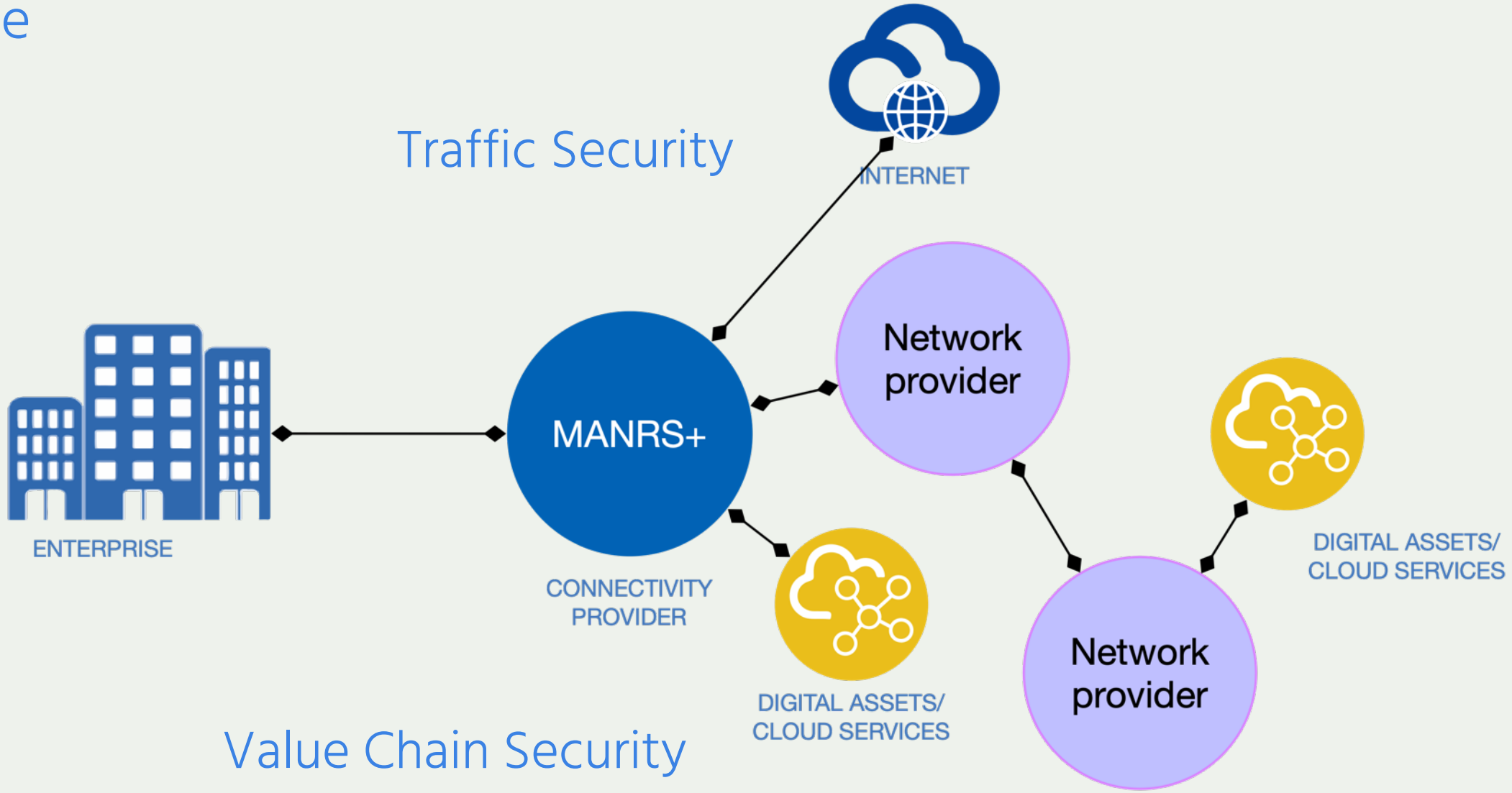
Work with industry partners to increase demand for security from their connectivity providers.

Connectivity Providers and their customers setting the requirements of the future quality mark for traffic security with the goal of eventually incorporating it in procurement policies and recommendations.

What does elevated mean?

- Stronger and more detailed requirements enforcing best practices in traffic security
- High level of assurance of conformance. This includes more profound technical audit and process audit.
- Extended set of requirements, covering a broader set of risks related to routing and traffic security
- More focus on the demands of relying parties

A use case


Traffic Security
INTERNET
Network provider
MANRS+
ENTERPRISE
CONNECTIVITY PROVIDER
DIGITAL ASSETS/ CLOUD SERVICES
DIGITAL ASSETS/ CLOUD SERVICES
Network provider
Value Chain Security

Requirements – in progress with WG

Path Security - Connectivity provider has detection capabilities and can mitigate the risk that traffic will be hijacked or detoured as a result of a mistake or an attack.

DDoS Attack Protection - Connectivity provider has detection and mitigating capabilities reducing the risk of a (volumetric) DoS attack.

Anti-Spoofing Protection - Connectivity provider detects and prevents traffic from their direct customers or peers with spoofed source IP addresses

Routing Information - Connectivity provider has accessible complete and up-to-date documentation of the intended routing announcements (e.g. RPKI ROAs) and other information on its routing policy (e.g AS-SET) that is necessary for deploying effective security controls by the Network.

Current status

MANRS+ WG

WG landing page: https://www.manrs.org/about/manrs-working-group/

WG calls every two weeks, alternating between 1200UTC and 1700UTC

WG mailinglist: <manrs-plus-wg@elists.manrs.org>

Work focus

MANRS+ Requirements

Survey to validate the requirements

Control or Capability	Conformance check

How you can support MANRS

Funding and Sustainability

- ISOC has funded MANRS initiative for past 9 years, but now needs support to continue to grow and strengthen the routing security community
- Consider becoming a MANRS sponsor to further improve the MANRS program. Various benefits available for supporting starting from USD 2,500
- We are also looking for industry sponsors interested in supporting the **MANRS Observatory**, **Mentors and Ambassadors Program**, **Training Program**, and community events including the **Routing Security Summit**

Feedback and Q/A session

Feedback

- What would you like to see the MANRS project engage on?
- Are there areas you feel that MANRS could be improved?
- How can the community better support MANRS?

Thank You

https://www.manrs.org

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